# PCG-FXA32/FXA33/FXA35/D/FXA36

# **SERVICE MANUAL**

## For American Area

US Model Canadian Model

Ver 4-2002D

**Revision History** 

Lineup : PCG-FXA32 PCG-FXA33 PCG-FXA35/D

PCG-FXA35/EPCG-FXA36



Illust: PCG-FXA36



**NOTEBOOK COMPUTER** 



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All other trademarks are trademarks or registered trademarks of their respective owners. Other trademarks and trade names may be used in this document to refer to the entitles claiming the marks and names or their produces. Sony Corporation disclaims any proprietary interest in trademarks and trade names other than its own. <u>Caution Markings for Lithium/Ion Battery</u> - The following or similar texts shall be provided on battery pack of equipment or in both the operating and the service instructions.

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

CAUTION: The battery pack used in this device may present a fire or chemical burn hazard if mistreated. Do not disassemble, heat above 100°C (212°F) or incinerate.

Dispose of used battery promptly.

Keep away from children.

CAUTION: Changing the back up battery.

- Overcharging, short circuiting, reverse charging, multilation or incineration of the cells must be avoided to prevent one or more of the following occurrences; release of toxic materials, release of hydrogen and/or oxygen gas, rise in surface temperature.
- If a cell has leaked or vented, it should be replaced immediately while avoiding to touch it without any protection.

#### Service and Inspection Precautions

#### 1. Obey precautionary markings and instructions

Labels and stamps on the cabinet, chassis, and components identify areas requiring special precautions. Be sure to observe these precautions, as well as all precautions listed in the operating manual and other associated documents.

#### 2. Use designated parts only

The set's components possess important safety characteristics, such as noncombustibility and the ability to tolerate large voltages. Be sure that replacement parts possess the same safety characteristics as the originals. Also remember that the  $\triangle$  mark, which appears in circuit diagrams and parts lists, denotes components that have particularly important safety functions; be extra sure to use only the designated components.

# 3. Always follow the original design when mounting parts and routing wires

The original layout includes various safety features, such as inclusion of insulating materials (tubes and tape) and the mounting of parts above the printer board. In addition, internal wiring has been routed and clamped so as to keep it away from hot or high-voltage parts. When mounting parts or routing wires, therefore, be sure to duplicate the original layout.

#### 4. Inspect after completing service

After servicing, inspect to make sure that all screws, components, and wiring have been returned to their original condition. Also check the area around the repair location to ensure that repair work has caused no damage, and confirm safety.

#### 5. When replacing chip components...

Never reuse components. Also remember that the negative side of tantalum capacitors is easily damaged by heat.

#### 6. When handling flexible print boards...

- The temperature of the soldering-iron tip should be about 270C.
- Do not apply the tip more than three times to the same pattern.
- Handle patterns with care; never apply force.

Caution: Remember that hard disk drives are easily damaged by vibration. Always handle with care.

#### ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE A SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

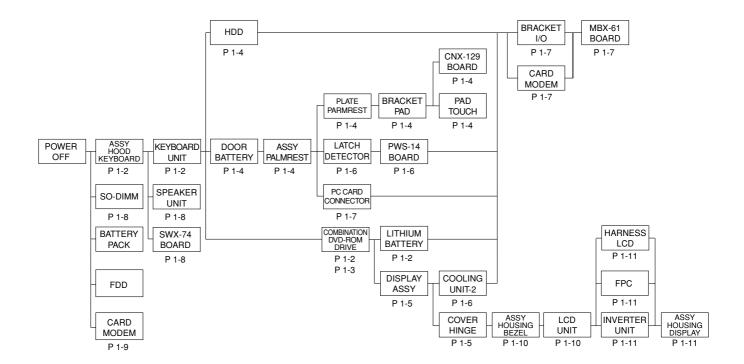
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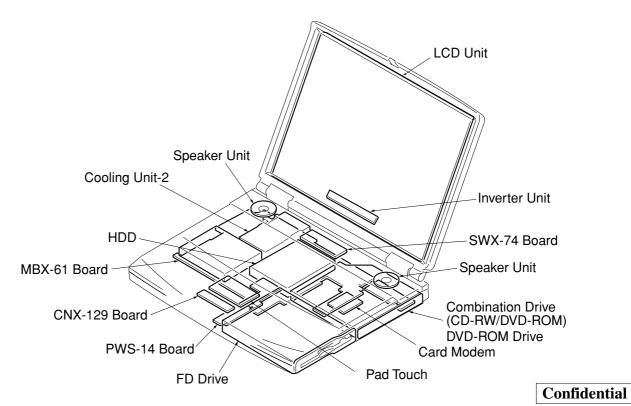
History of the changes is shown as the "Revision History" at the end of this data.

## 1-1. Flowchart



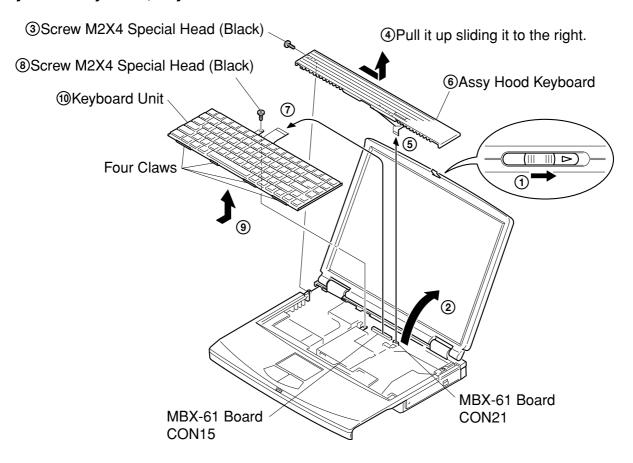
- P XX means pages that appears in this manual.
- Remember that hard disk drives are easily damaged by vibration. Always handle with care.

# 1-2. Main Electrical Parts Location Diagram

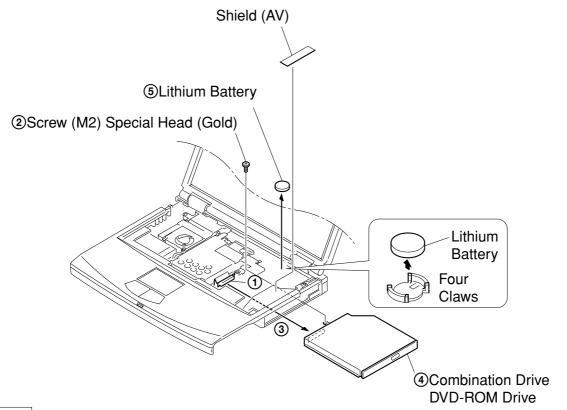


## 1-3.Removal

## 1. Assy Hood Keyboard, Keyboard Unit

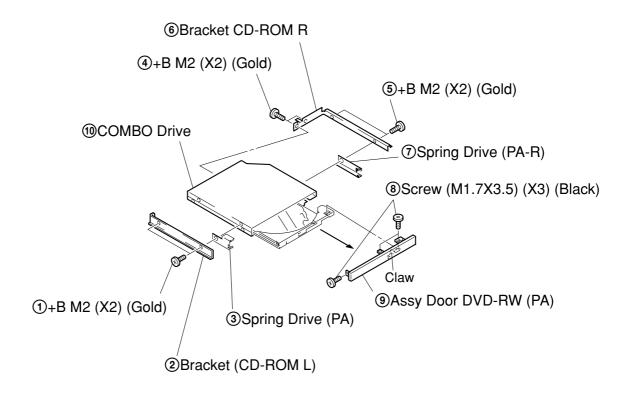


#### 2. Lithium Battery, Combination Drive, DVD-ROM Drive

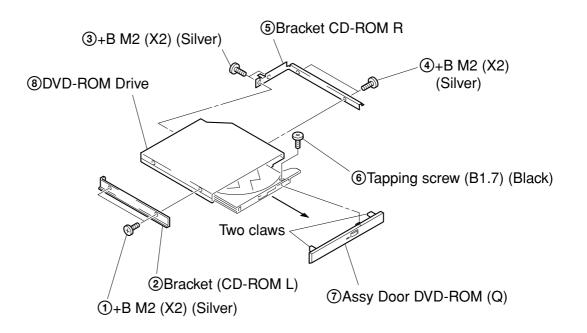


#### 3. Combination Drive, DVD-ROM Drive

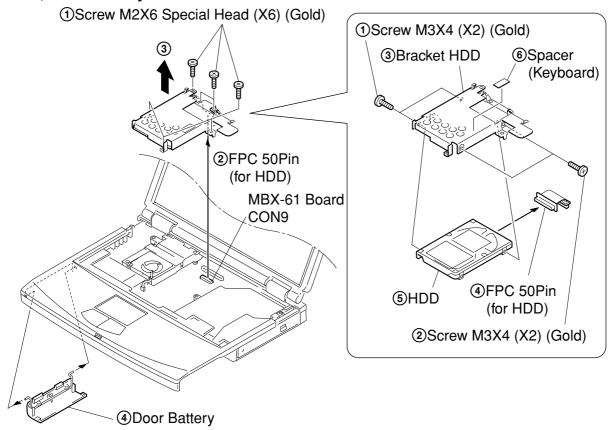
#### 1. FXA33/FXA35/D/FXA36 Model



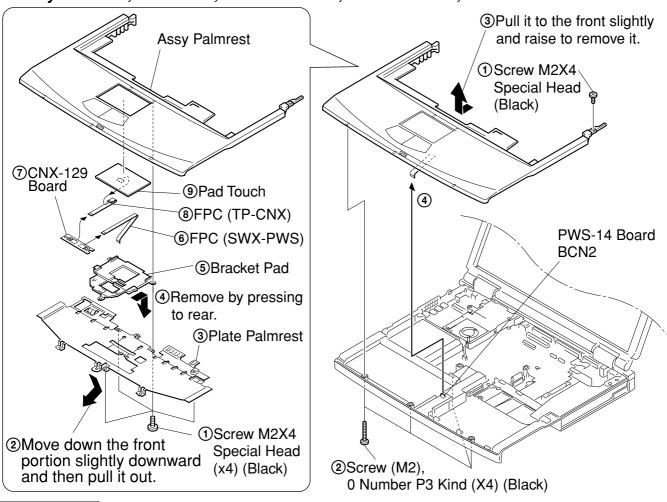
#### 2. FXA32 Model



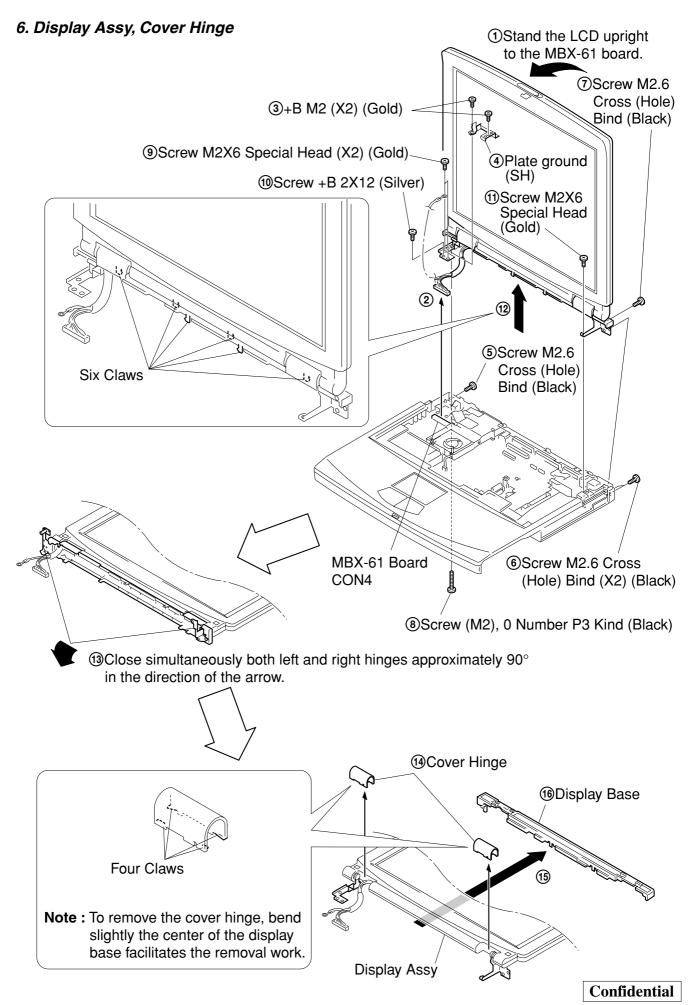
#### 4. HDD, Door Battery



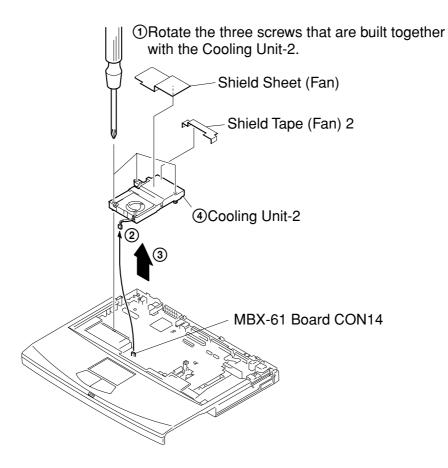
#### 5. Assy Palmrest, Pad Touch, CNX-129 Board, Plate Palmrest, Bracket Pad



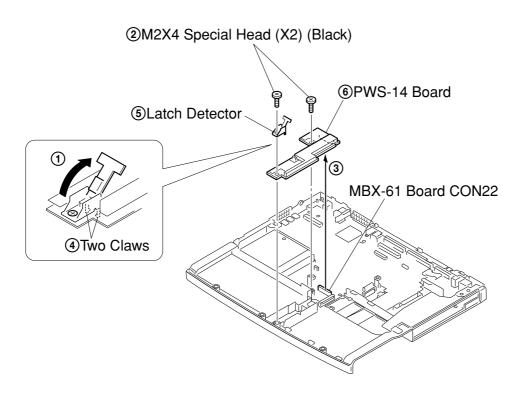
#### Confidential



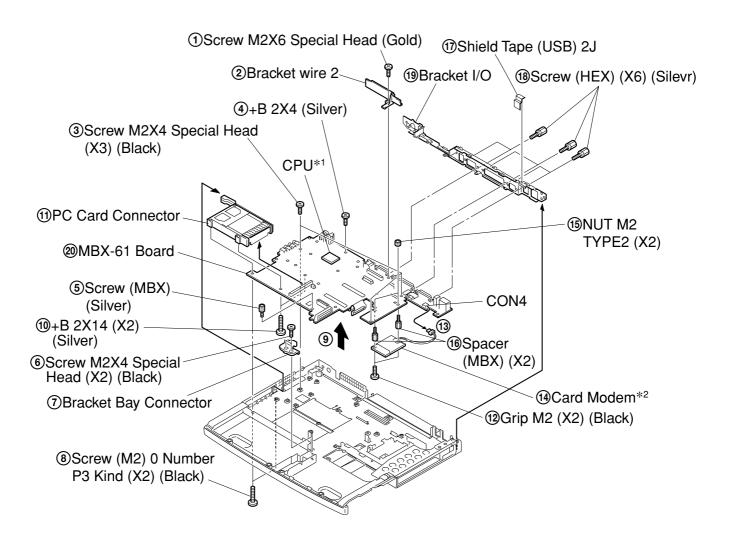
## 7. Cooling Unit-2



## 8. PWS-14 Board, Latch Detector



#### 9. PC Card Connector, Card Modem, MBX-61 Board, Bracket I/O

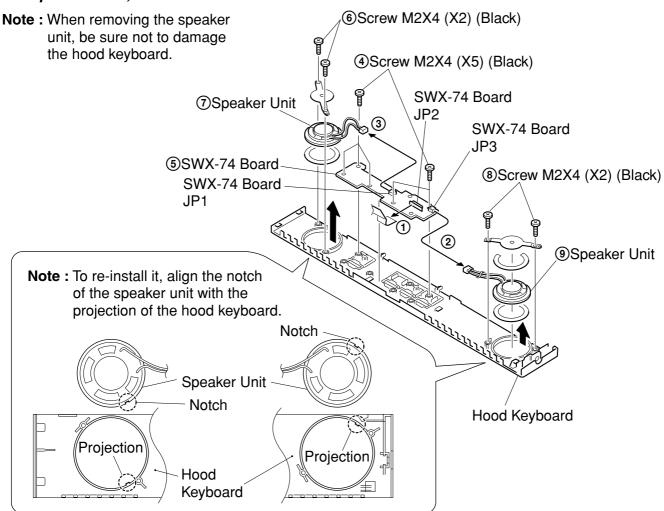


<sup>\*1</sup> When removing the CPU, refer to "1-4. Replacing the CPU".

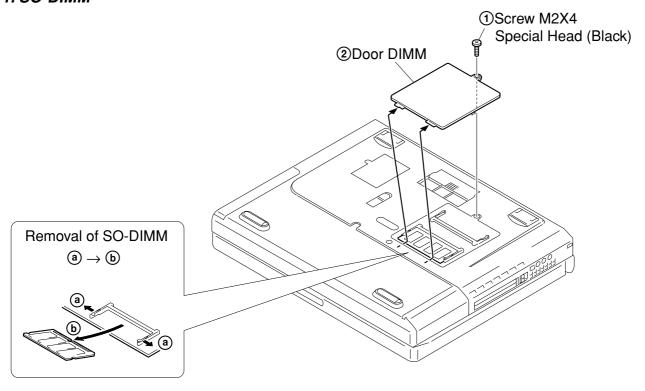
Refer to the subsequent paragraph "10. Card Modem" for more details.

<sup>\*2</sup> Card Modem can be removed from the bottom.

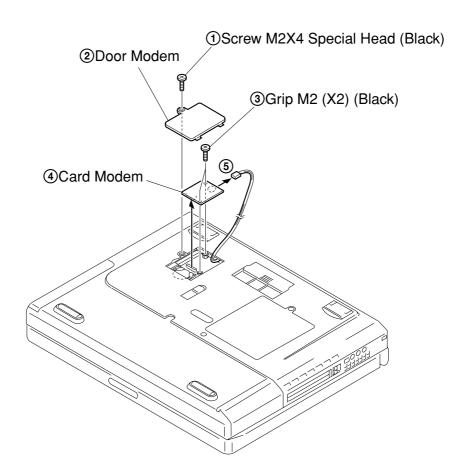
#### 10. Speaker Unit, SWX-74 Board



#### 11. SO-DIMM

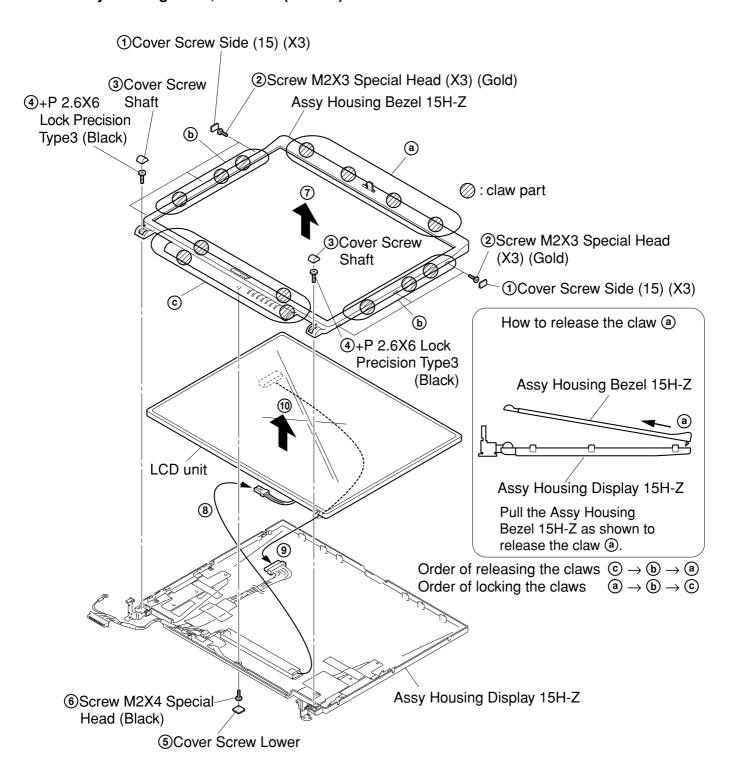


## 12. Card Modem (Removing from the bottom)

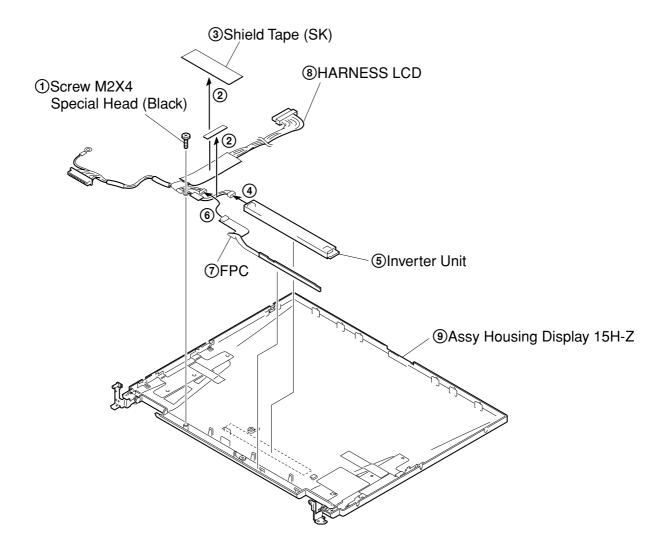


#### 13. LCD Section - Made by HI -

#### 1. Assy Housing Bezel, LCD unit (15 inch)

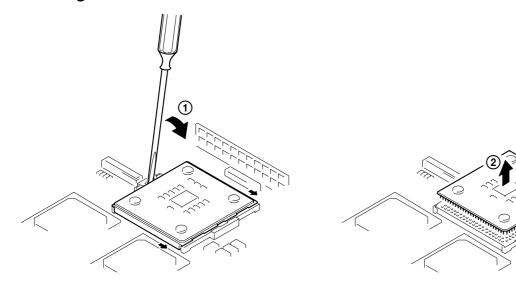


## 2. Inverter Unit, Harness LCD, FPC, Assy Housing Display



## 1-4.Replacing the CPU

## 1. Removing the CPU



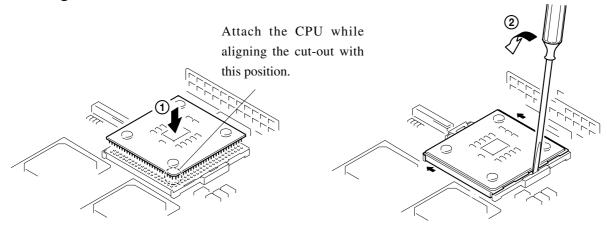
① Insert a screwdriver tip into the groove as shown and slant it in the direction of the arrow.

**NOTE:** Do not use screwdrivers having a large tip than the width of the groove.

Otherwise, it may cause the groove to be damaged.

The base under the CPU moves slightly in the direction of the arrow and the lock is released. ② The CPU can be removed upward.

#### 2. Installing the CPU



① Insert all pins of the replacement CPU into the holes of the base and push the CPU in the direction of the arrow. ② Insert a screwdriver tip into the groove as shown and slant it in the direction of the arrow.

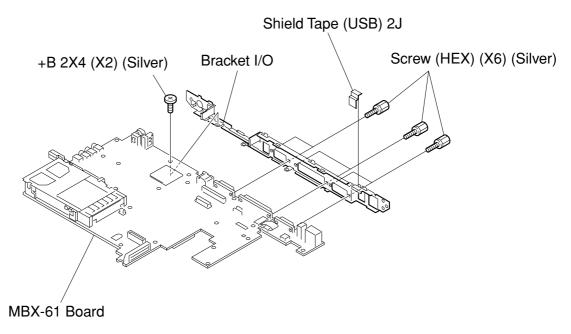
The base under the CPU moves slightly in the direction of the arrow and the CPU is locked.

## 1-5. Replacing Various Connectors on the MBX-61 Board

Replace the connectors of "5-3. Connector Section" as follows.

#### 1. Removing the Bracket I/O

When removing the connectors of reference numbers 901, 902 and 903 (refer to page 5-7), remove the bracket I/O first.



## 2. Removing the Various Connectors

The connectors of reference numbers 901, 902 and 903 (Refer to page 5-7, 5-8) are connected by soldering, remove the soldering first then remove the connectors.

# 1-6. DIP Switch Setting of the MBX-61 Board

Set the DIP switch on the MBX-61 board (main board) to match with the LCD that is used in this computer.

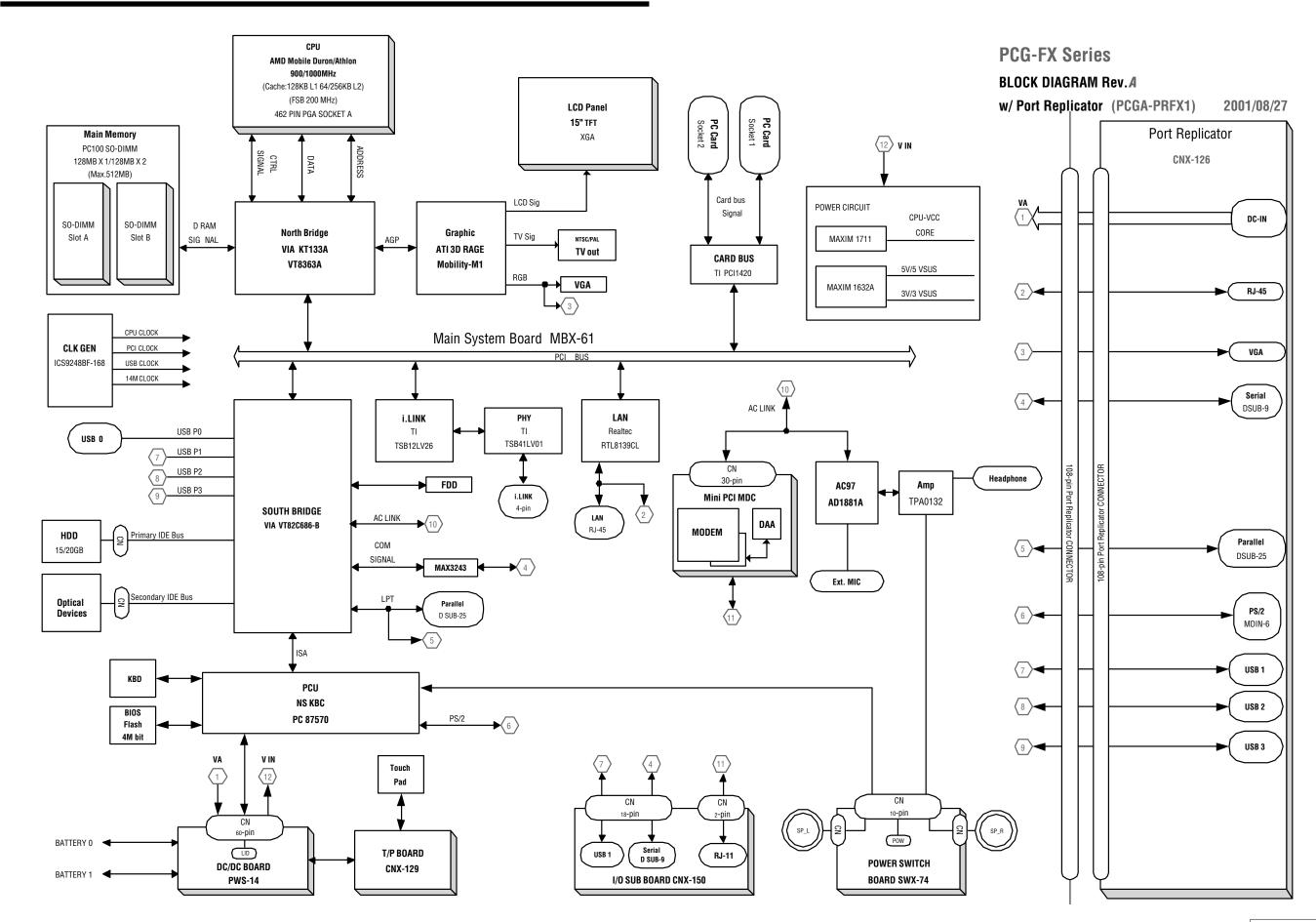
Part No. of LCD	DIP switch setting
	ON 1 2 3 4
1-476-186-12	The upper position where ON indication is shown is the ON position . The lower position is the OFF position.
	No. 1 2 3 4 ON/OFF 0 1 0 0
	0:ON 1:OFF
A 8025 245 A	ON 1 2 3 4  The upper position where ON indication is
A-8025-245-A	shown is the ON position . The lower position is the OFF position.
	No. 1 2 3 4 ON/OFF 1 0 1 0 0:ON 1:OFF

# CHAPTER 2. SELF DIAGNOSTICS

## ATTENTION

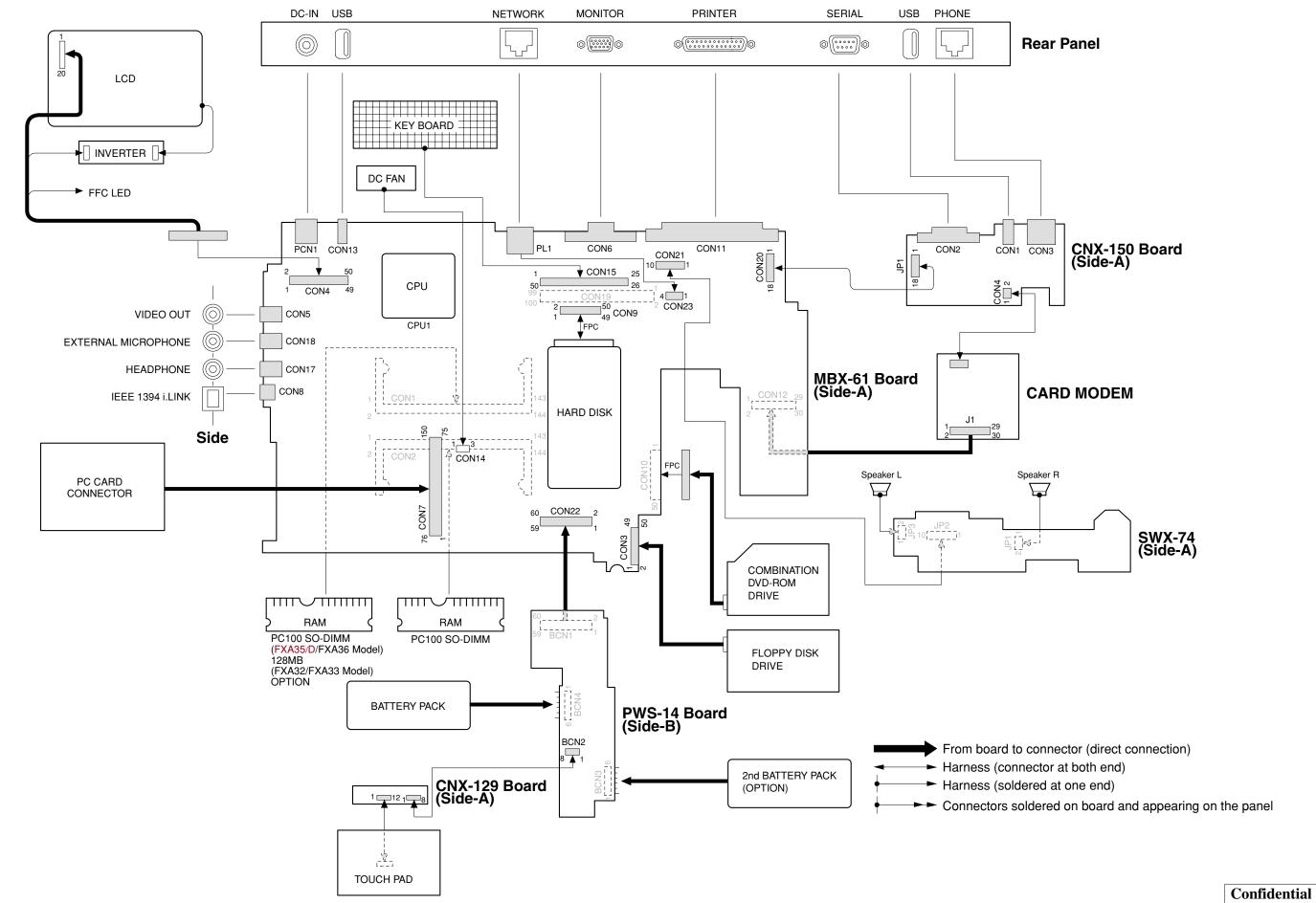
Please confirm "Self Diagnostics" method which will be informed you with distribution of "Self Diagnostics" software.

# CHAPTER 3. BLOCK DIAGRAM



# CHAPTER 4.

## FRAME HARNESS DIAGRAM



## **EXPLODED VIEWS AND PARTS LIST**

#### NOTE:

- · The mechanical parts with no reference number in the
- exploded views are not supplied.

  Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- When two or more parts are shown in parallel, use the part described first as the main part.
- The indication [CH] is used for identification of part type.
- Regarding the boards of this model, the discrete parts on the boards cannot be replaced. However, Some connectors can be replaced.

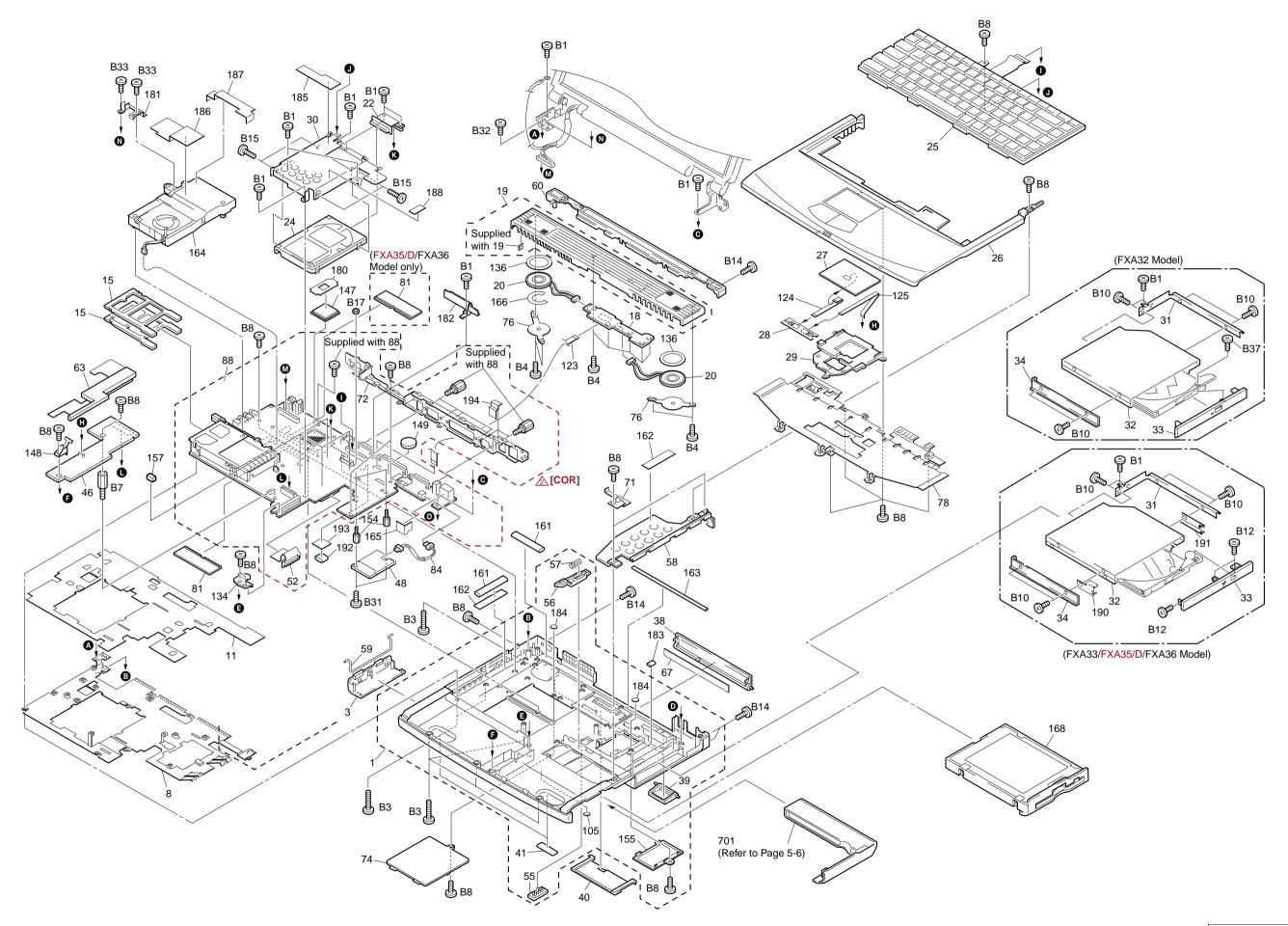
The components identified by mark  $\boldsymbol{\vartriangle}$  or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  $\triangle$  sont critiques pour la sécurité.

Ne les remplacer que par une pièce portant le numéro spécifié.

# 5-1. Main Section

Ref.No.  1 3 * 8 * 11 15	Part No. X-4623-848-1 4-640-837-22 4-651-706-01 4-656-752-01 4-643-832-21	Description [CH]ASSY BOTTOM (Q) DOOR BATTERY HEATSINK BOTTOM [CH]INSULATOR HEATSINK BOTTOM DUMMY CARD	Ref.No.  149 154 155 157 161	Part No. 1-756-148-11 4-651-989-01 4-651-701-01 4-654-701-01 4-654-019-01	Description SECONDARY BATTERY, LITHIUM SPACER (MBX) DOOR MODEM CUSHION (HD-M2) GASKET (AV)
18 19 20 22 24	A-8049-276-A X-4623-389-1 1-529-287-11 1-790-639-22 1-796-230-11	COMPLETE PWB SWX-74 ASSY HOOD KEYBOARD Z (P) SPEAKER UNIT FPC 50PIN (FOR HDD) (FXA35/D/FXA36) HDD (DK23CA-20, 20G, BALL)	162 163 164 165 166	4-654-047-01 4-653-936-01 A-8049-300-A 4-644-667-01 4-654-631-01	SHIELD (AV) GASKET (HB/M) COOLING UNIT-2 COVER RJ-11 GUARD SPK
24 25 26 27 28	1-796-173-11 1-476-647-12 X-4623-849-1 1-772-529-72 A-8049-275-A	(FXA32/FXA33)HDD (DK23CA-15-15G) KEY BOARD UNIT (US) [CH]ASSY PALMREST (Q) PAD, TOUCH COMPLETE PWB CNX-129	168 180 180 * 181 * 182	4-658-086-01 4-656-486-01 4-654-398-01 4-657-164-03	FDD UNIT ASSY (TN-CH)  (FXA32/FXA33)TAPE CPU (D7)  (FXA35/D/FXA36)TAPE CPU (A6)  PLATE GROUND (SH)  BRACKET WIRE 2
* 29 * 30 31 32	4-651-699-01 4-651-708-12 4-640-861-04 1-796-072-21	BRACKET PAD BRACKET (HDD) BRACKET CD-ROM R (FXA33/FXA35/D/FXA36) COMBO DRIVE (UJDA710)	183 184 185 186 187	4-655-511-01 4-654-776-01 4-654-783-01 4-655-042-01 4-658-711-01	GASCKET (DRIVE) INSULATOR (SCREW) SHIELD TAPE (HDD) SHIELD SHEET (FAN) SHIELD TAPE (FAN)2
32	1-796-171-21	(FXA32)DVD-ROM (SDR-081,8X)	188 190	4-658-542-01 4-657-629-01	SPACER (KEY BOARD) (FXA33/FXA35/D/FXA36)
33	X-4623-436-2	(FXA33/FXA35/D/FXA36)	191	4-657-049-01	SPRING DRIVE (PA)
33 * 34 38 39	X-4623-747-1 4-640-860-03 4-656-727-01 4-656-735-01	(FXA32)ASSY DOOR DVD-ROM (Q) BRACKET (CD-ROM L) [CH]DOOR I/O [CH] FOOT BEAR	192 193	4-658-470-01 4-659-640-01	SPRING DRIVE (PA-R) [CH]GASKET (DOCK) TAPE (DOCK) J
40	4_651_714_01	DOOR DOCKING CONNECTOR	194	4-659-641-01	SHIELD TAPE (USB) 2J
41 46 48 52	4-656-736-01 A-8049-270-A 1-761-380-23 1-790-640-11	[CH]FOOT FRONT COMPLETE PWB PWS-14 CARD, MODEM FPC 50PIN (FOR CD-ROM)	B1 B3 B4 B7	4-641-726-41 4-644-899-01 4-639-112-01 4-644-402-12 4-641-726-11	SCREW (M2), SPECIAL HEAD SCREW (M2), O NUMBER P3 KIND SCREW M2X4 SCREW (MBX) SCREW (M2), SPECIAL HEAD
55 56 * 57 * 58 * 59	4-640-845-11 4-644-349-01 4-640-854-01 4-651-850-01 4-640-857-01	LATCH BAY SPRING BAY BRACKET BOTTOM DOOR BATTERY SPRING	B10 B12 B14 B15 B17	4-652-498-01 4-645-177-01 4-645-497-01 4-635-301-01 7-622-205-05	+B M2 (NOJI) SCREW (M1.7X3.5) SCREW (M2.6), CROSS (HOLE) BIND SCREW M3X4 NUT M2 TYPE2
60 63 67 * 71 72	4-656-756-01 4-641-851-02	DISPLAY BASE COVER BATTERY CONNECTOR [CH]LABEL I/O SPRING (FDD), PLATE [CH]BRACKET IO	B31 B32 B33 B37	7-621-772-68 4-642-852-21	GRIP, M2 SCREW +B 2X12 +B M2 SCREW (B1.7), TAPPING
74 * 76 * 78 81	4-644-362-11	DOOR DIMM BRACKET SPK PLATE PALMREST IC HYM71V16M655AT6-P (PC-100 SO-DIMM (128MB CL2))	800		Refer to section "5-1-A.FDD Section".
84	1-960-827-21	HARNESS (2 PIN)			
88 105 123 124 125					
* 134 136 147	4-645-433-01 4-644-357-01 6-701-605-01	(FXA32/FXA33)			
147	6-701-607-01	IC DHM0900AQS1B (Duron 900MHz) (FXA35/D/FXA36) IC AHM1000AVS3B (Athlon4 1.0GHz)			
148	X-4623-561-2	ASSY LATCH DETECTOR			

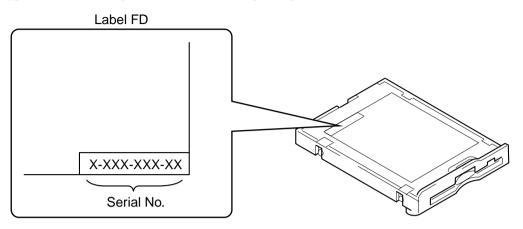


# 5-1-A. FDD Section

# MEMO

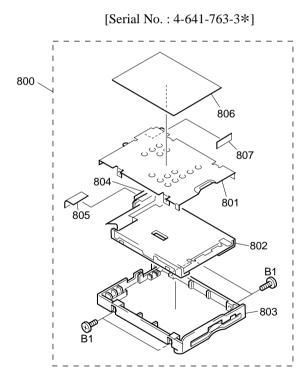
## How to use properly the FDD repair parts.

Types of service to be provided are different depending on the serial No. of the FDD in use.



The service types are shown below depending on the serial No. that is printed in the bottom right of the FD label.

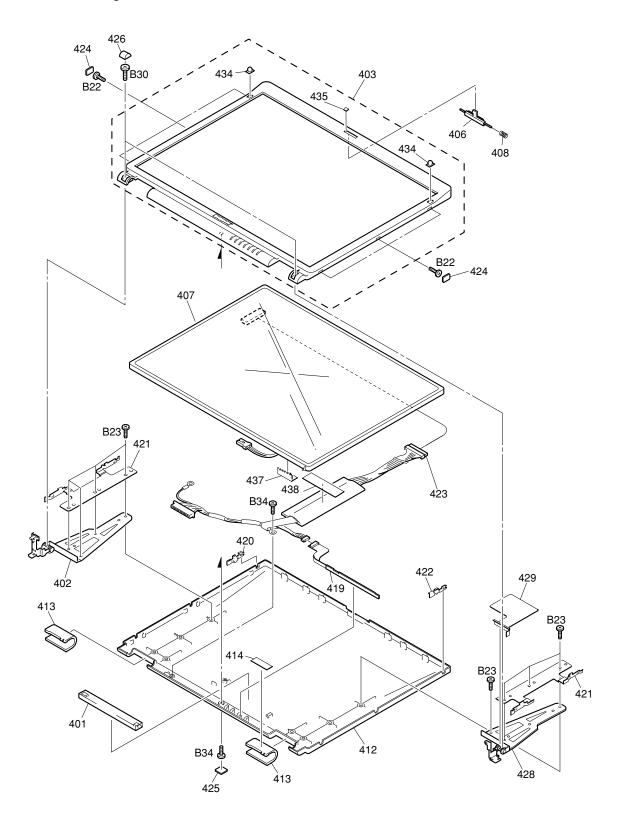




<u>Ref.No.</u>	Part No.	Description
800	A-8025-674-A	FDD UNIT ASSY (TN-CH)

Ref.No.	Part No.	<u>Description</u>
800 801 802 803 804 805	A-8025-669-A 4-640-828-01 1-796-231-11 X-4623-835-1 1-790-641-11 4-641-629-01	ASSY BAY FD (TN) PLATE FDD FDD (FD-07-7760) ASSY BOTTOM FDD Z (TCY3) FPC 50PIN (FOR FDD) INSULATOR FDD
806 807	4-641-763-31 4-644-053-01	LABEL FD SPACER FDD
В1	4-646-807-01	0 PLATE M2.5 (FDD)

# 5-2. LCD Section (FXA32/FXA33/FXA36 Model) - Made by HI -



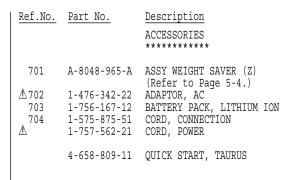
401 402 403	Part No. 1-476-318-21 X-4623-380-1 X-4623-419-2 4-637-902-31 1-476-186-12	INVERTER UNIT HINGE LEFT 15 ASSY HOU, BEZEL 15H-Z
408 412 413 414 414	4-637-903-01 X-4623-416-1 4-642-762-31 4-658-354-11 4-658-354-21	SPRING LATCH ASSY HOU, DISPLAY 15H-Z COVER HINGE (15) (FXA36)LABEL ID (U) (FXA33)LABEL ID (U)
* 421	4-658-354-31 1-757-604-11 4-647-506-01 4-647-508-01 4-647-507-01	
424 425 426		COVER SCREW SIDE (15) COVER SCREW LOWER COVER SCREW SHAFT
434 435 437	4-635-276-22	
B23 B30	4-641-726-81 4-644-165-01 4-643-550-01 4-641-726-11	SCREW (M2.6X4), 0 PLATE P1 MAIN +P 2.6X6 LOCK PRECISION TYPE3

Set the DIP switch on the MBX-61 board (Main board) to match with the LCD (1-476-186-12) that is used in this computer.



The upper position where ON indication is shown is the ON position . The lower position is the OFF position.

No.	1	2	3	4	
ON/OFF	0	1	0	0	
0:ON 1:OFF					



## 701 Weight saver (1)

#### 703 Battery pack (1)



#### 702 AC adaptor (1)



#### 704 Video cable (1)



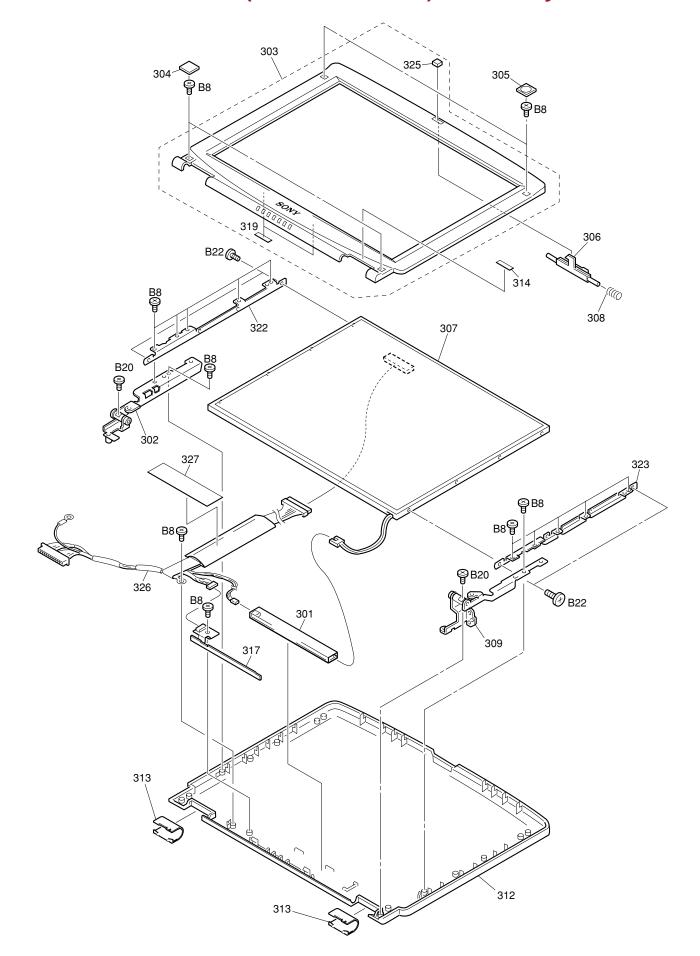
The components identified by mark  $\triangle$  or dotted line with mark  $\ensuremath{\Delta}$  are critical for safety. Replace only with part number specified.

5-6

Les composants identifiés par une marque 🛆 sont critiques pour la sécurité.

Ne les remplacer que par une pièce portant le numéro spécifié.

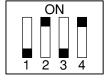
# 5-2-A. LCD Section (FXA35/D Model) – Made by HI –



Ref.No.	Part No.	Description
302 303 304	1-476-318-21 X-4623-378-1 X-4623-409-3 4-635-277-22 4-635-276-22	HINGE LEFT MV ASSY HOU, BEZEL 14SA-Z COVER SCREW LOWER
307 308 309	4-637-903-01 X-4623-379-1	ASSY LCD 14XGA (HT) (S)
314 317 319	4-642-762-31 4-658-354-41 1-757-605-11 4-654-966-01 4-644-163-11	LABEL ID (U) PWB, FLEXIBLE PRINT (SINGLE) SHEET (BEZEL), ADHESIVE
325 326	4-644-164-11 4-642-760-12 1-961-018-81 4-650-831-01	HARNESS, LCD (XGA-F-N)
B20	4-641-726-11 7-628-254-00 4-658-316-01	SCREW +PS 2.6X5

#### NOTE

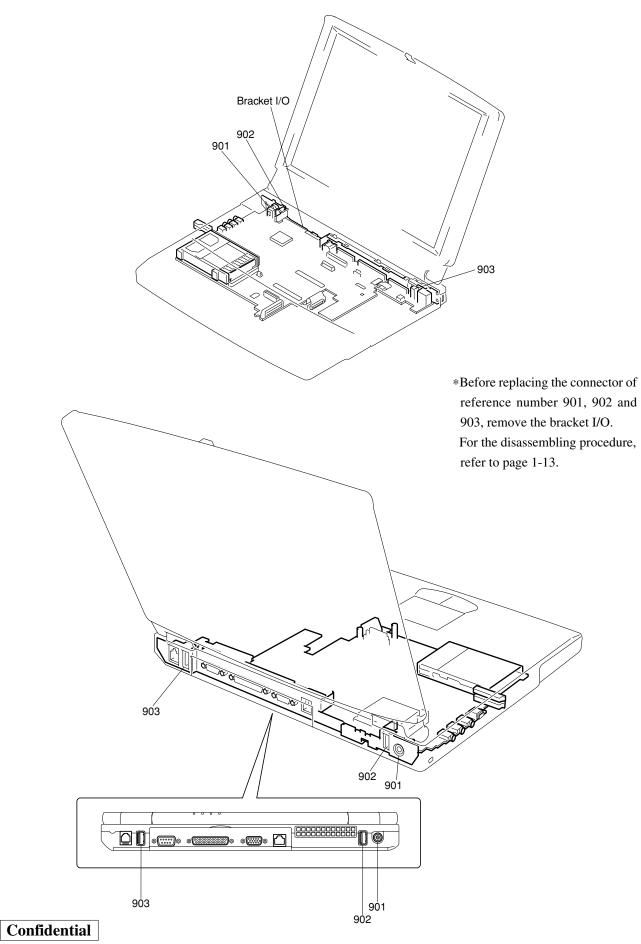
Set the DIP switch on the MBX-61 board (Main board) to match with the LCD (A-8025-245-A) that is used in this computer.



The upper position where ON indication is shown is the ON position . The lower position is the OFF position.

No.	1	2	3	4
ON/OFF	1	0	1	0
0 · ON 1 · OFF				

# 5-3. Connector Section



Ref.No.	Fig.	Part No.	Description
901		1-779-745-21	JACK, DC DC IN connector
902		9-885-018-97	CONNECTOR (1.2MM), USB USB connector
903		9-885-018-98	CONNECTOR (1.6MM), USB USB connector

<sup>\*</sup> Among the parts that are used on the boards of this model, only the connectors that are show in the list can be replaced.

(The parts other that the specified connectors cannot be replaced.)

## **Revision History**

Suffix	Ver.	Date	Contents	QM No.		
-01	Ver. 1	2001.10.03	First Edition			
-02	Ver.2	2002.01.07	Front Page (Model Line Up), Page 1-3, Page 1-14, Page 4-1, Page 5-2, Page 5-3	M2002_001K		
			Page 5-4, Page 5-6(a), Page 5-6(b), Back Cover			
-03	Ver.3	2002.03.20	<b>△</b> Page 5-3	N2002_020K		
-04	Ver.4	2002.03.26	<b>⚠</b> Page 5-2, Page 5-4(a) Page 5-4(b)	N2002_040K		
	< Remarks > 2001.12.08 Change of Service Manual P/N [ 9-872-253-01 ⇒ 9-874-453-01]					